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IS 4735 (1968): Arm Shaft Cams for Sewing Machines for Household Purposes [MED 29: Sewing Machines]



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IS : 4735 - 1968

Indian Standard
SPECIFICATION FOR
ARM SHAFT CAMS FOR SEWING MACHINES
FOR HOUSEHOLD PURPOSES

UDC 687.053-233.13



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INDIAN STANDARDS INSTITUTION
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TO

IS:4735-1968 SPECIFICATION FOR ARM SHAFT CAMS FOR
SEWING MACHINES FOR HOUSEHOLD PURPOSES

Alterations

(Page 4, clause 2.1, line 2) - Substitute 'grade 15' for 'grade 20'.

(Page 4, clauses 4.1 and 4.2) - Substitute the following for the existing clauses:

'4.1 The diameter variation on the cam shall not be more than 0.01 mm from its specified value at any point on the cam.

4.2 The error in parallelism of cam face with respect to the bore axis shall not exceed 0.1 mm per 100 mm.

4.3 The error in squareness of shoulder face with respect to the cam surface shall not exceed 0.3 mm per 100 mm.'

(Page 4, clause 6.1, line 2) - Substitute 'trade-mark, if required' for 'trade-mark'.

(Page 6, clause 7.1) - Substitute the following for the existing clause:

'7.1 Each arm shaft cam shall be given a suitable anti-rust coating or wrapped in vapour phase inhibitor paper (commonly known as VPI paper). The wrapped arm shaft cam shall be securely packed in accordance with the best prevalent trade practice. Each package shall bear manufacturer's name, trade-mark and description of contents.'

(Page 6, clause 7.1.1, line 1) - Substitute 'packages' for 'cartons'.

(EDC 34)

Indian Standard

SPECIFICATION FOR ARM SHAFT CAMS FOR SEWING MACHINES FOR HOUSEHOLD PURPOSES

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Development Commissioner, Small Scale Industries (Ministry of Industrial Development and Company Affairs)

Indian Standard
SPECIFICATION FOR
ARM SHAFT CAMS FOR SEWING MACHINES
FOR HOUSEHOLD PURPOSES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 10 July 1968, after the draft finalized by the Sewing Machines Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 This standard covers the requirements for arm shaft cams, also known as feed cams, for sewing machines for household purposes, and is intended to assist in regulating the quality of indigenous arm shaft cams for sewing machines. This standard is one of a series of Indian Standards on sewing machines and their components.

0.3 Non-metric threads have also been specified as an interim measure till the complete changeover to metric system takes place. The manufacturers have agreed to adopt ISO metric screw threads at an early date.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies the requirements for three types of arm shaft cams for sewing machines for household purposes.

1.1.1 This standard does not deal with arm shaft cams for industrial or special purpose sewing machines.

*Rules for rounding off numerical values (*revised*).

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2. MATERIAL.

2.1 The arm shaft cams shall be manufactured from any suitable material, such as grey cast iron conforming to grade 20 of IS : 210-1962*.

3. DIMENSIONS

3.1 The main dimensions for arm shaft cams shall be as given in Tables 1, 2 and 3.

4. TOLERANCES

4.1 The dimensions of any point on the outside periphery of the cam with respect to its axis shall not deviate more than 0.005 mm from specified value.

4.2 The error in parallelism of cam face with respect to the bore axis shall not exceed 0.1 mm.

5. WORKMANSHIP AND FINISH

5.1 The cam face shall be precision ground to a fine finish without any line mark.

5.2 The arm shaft cams shall be free from defects, such as cracks, blow-holes and rust.

6. MARKING

6.1 The arm shaft cams shall be marked with the manufacturer's name or trade-mark.

6.1.1 The arm shaft cams may also be marked with the ISI Certification Mark.

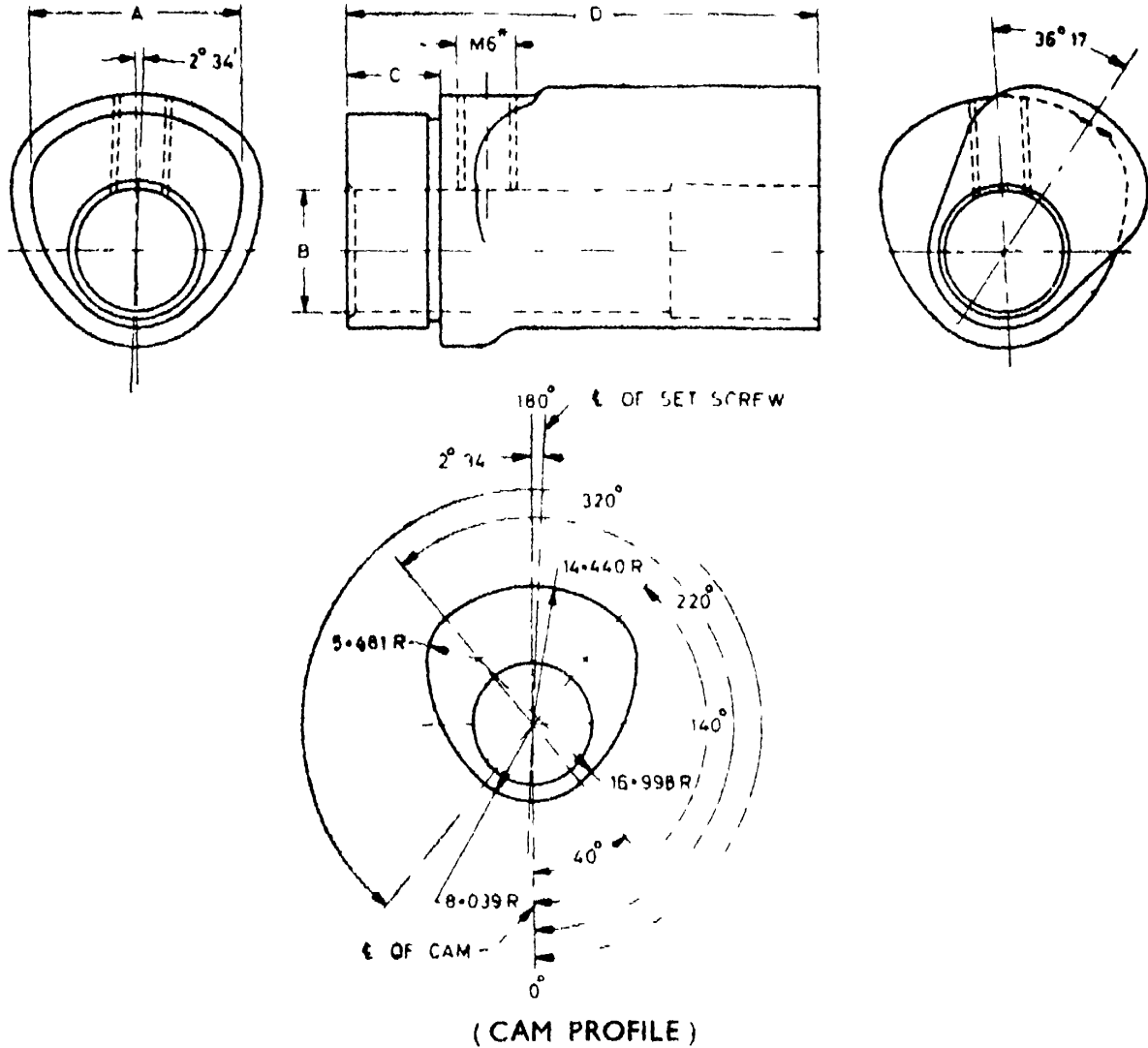
NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

*Specification for grey iron castings (revised).

TABLE 1 DIMENSIONS FOR ARM SHAFT CAMS, TYPE A

(Clause 3.1)

All dimensions in millimetres.



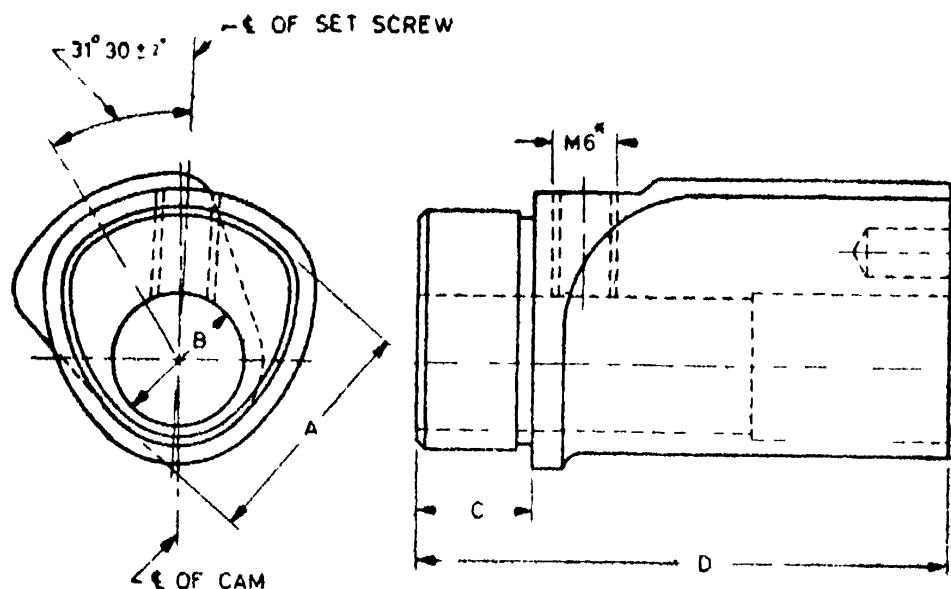
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>Max</i>	22.479	12.833	10.147	50.548
<i>Min</i>	22.467	12.821	10.096	50.419

*15/64 \surd 28 TPI (sewing machine) threads may also be used till the complete changeover to metric system is effective.

TABLE 2 DIMENSIONS FOR ARM SHAFT CAMS, TYPE B1

(Clause 3.1)

All dimensions in millimetres



	A	B	C	D
Max	22.479	12.712	10.922	50.800
Min	22.467	12.700	10.541	50.673

*O B.A. threads may also be used till the complete changeover to metric system is effective.

7. PACKING

7.1 Each arm shaft cam shall be given a suitable anti-rust coating or wrapped in vapour phase inhibitor paper (commonly known as VPI paper). The wrapped arm shaft cams shall be securely packed in cardboard cartons in accordance with the best prevalent trade practice. Each carton shall bear manufacturer's name and description of contents.

7.1.1 The cartons may also be marked with the ISI Certification Mark (see Note under 6.1.1).

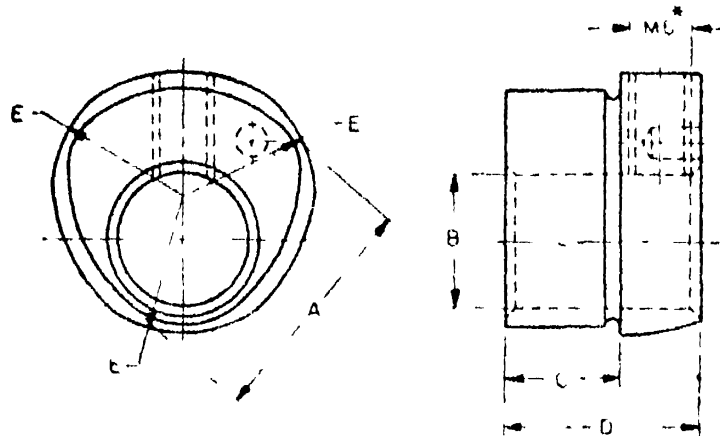
8. SAMPLING

8.1 Unless otherwise agreed to between the supplier and the purchaser, the sampling plan as given in Appendix A shall be followed. For further information reference may be made to IS : 2500 (Part I)-1963.*

*Sampling inspection tables: Part I Inspection by attributes and by count of defects.

TABLE 3 DIMENSIONS FOR ARM SHAFT CAMS, TYPE B2*(Clause 3.1)*

All dimensions in millimetres.



	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
<i>Max</i>	22·479	12·712	10·922	18·923	12·675
<i>Min</i>	22·467	12·700	10·541	18·796	12·594

*O B.A. threads may also be used till the complete changeover to metric system is effective.

APPENDIX A

(Clause 8.1)

SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

A-1. SCALE OF SAMPLING

A-1.1 Lot— In any consignment, all the arm shaft cams of the same type and manufactured from the same material under essentially similar conditions of manufacture, shall be grouped together to constitute a lot.

A-1.2 For ascertaining the conformity of the lot to the requirements of the specification, tests shall be carried out for each lot separately. The number of cams to be selected at random for this purpose shall be in accordance with col 1 and 2 of Table 4.

TABLE 4 SCALE OF SAMPLING AND PERMISSIBLE NUMBER OF DEFECTIVES

(Clauses A-1.2 and A-2.1)

No. OF ARM SHAFT CAMS IN THE LOT	FOR DIMENSIONS, TOLERANCES, WORKMANSHIP AND FINISH	
	Sample Size	Permissible No. of Defectives*
<i>N</i> (1)	<i>n</i> (2)	(3)
Up to 15	5	0
16 „ 40	8	0
41 „ 110	13	0
111 „ 300	20	1
301 „ 500	32	1
501 „ 800	50	2
801 „ 1 300	80	3
1 301 and above	123	5

*This ensures that lots containing only 1.5 percent or less defectives will be accepted most of the times.

A-1.3 The cams shall be selected at random, in order to ensure the randomness of selection, the following procedure is recommended for use:

Starting from any cam in a lot, count them in one order as 1, 2, 3,, up to r and so on, where r is the integral part of N/n (N being the number of cams in the lot and n being the number of cams in the sample). Every r th cam thus counted shall be selected to constitute a sample.

A-2. CRITERIA FOR CONFORMITY

A-2.1 The cams selected according to A-1.2 and A-1.3 shall be examined for dimensions (see 3), tolerances (see 4), and workmanship and finish (see 5). If the number of cams failing to meet one or more of the requirements mentioned above is less than or equal to the permissible number of defectives given in col 3 of Table 4, the lot shall be declared as conforming to the requirements of these characteristics, otherwise not.

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